

REMARKS

Claims 1-3, 7-13, 27-34, 38-43, and 47-52 are pending. Claims 4-6, 14-26, 35-37, 44-46, and 53-55 have been cancelled. Applicants reserve the right to prosecute subject matter withdrawn from consideration by cancellation in one or more continuation, continuation-in-part, or divisional applications. Claims 1, 31, 41, and 50 have been amended. For example, support can be found for the claim amendments in paragraph 48 on page 14 of the instant specification. Thus, the claims are fully supported by the instant specification and no new matter has been added.

Rejections Under §112

Claims 1-3, 14-16, 31-34, 41-43, and 50-52 are rejected under 35 U.S.C. §112, first paragraph as not being enabled by the specification. The Examiner alleges that the specification does not enable a person skilled in the relevant art to make and/or use the invention commensurate with the scope of the claims. Applicants respectfully disagree.

The Examiner has deemed claims 7-13, 27-30, 38-40, and 47-49 allowable. These claims are directed to compositions and methods of use of a polypeptide of SEQ ID NO:12. Applicants have amended the remaining pending rejected independent claims (*i.e.*, claims 1, 31, 41, and 50) to mirror those claims deemed allowable with the caveat that the polypeptide encompassed by the claims and used in the method claims is now required to be at least 95% identical to SEQ ID NO:12 (rather than 91% identical). The instant specification discloses five polypeptides that are at least 95% identical to SEQ ID NO:12 – namely SEQ ID NOS:30 and 34 (that are 99% identical) and SEQ ID NOS:48, 60, and 72 (that are 95% identical). Additionally, all of these polypeptides have been shown to have antifungal activity well above that of wild type chitinase (see Tables 4-6 of the instant specification).

The claimed nucleic acids are described by both structural and functional features. Structural limitations are imposed on nucleic acid molecules by the claims such that each member of the claimed genus must have a nucleotide sequence that encodes a polypeptide that is at least 95% identical to SEQ ID NO:12. This high degree of identity surely provides one skilled in the art with guidance as to the class of nucleic acid molecules and polypeptides encompassed by the claims. Additionally, the claims also require that the nucleic acid molecules encode a chitinase polypeptide and/or a polypeptide with chitinase activity and thus impose a functional limitation on the encoded polypeptide. The instant specification discloses a number of methods to measure chitinase activity. These straightforward assays provide an easy way to determine if a candidate nucleic acid molecule that meets the structural features (*i.e.*, nucleotide sequence) required by the claims also meets the functional limitations (*i.e.*, chitinase activity). Thus, the members of the claimed genus are enabled sufficiently by the specification. An invention is enabled even though the disclosure may require some routine experimentation to practice the invention. *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1384, 231 U.S.P.Q. 81, 94 (Fed. Cir. 1986).

Furthermore, Applicant is under no duty to ensure that every nucleic acid molecule that is 95% identical to SEQ ID NO:12 be a functional chitinase. A claim can be valid even if there are non-working embodiments. "It is not a function of the claims to specifically exclude . . . possible inoperative substances . . ." *Atlas Power Co. v. E. I. Du Pont de Nemours & Co.*, 750 F.2d 1569, 224 USPQ 409 (Fed. Cir. 1984) citing *In re Dinh-Nguyen*, 492 F.2d 856, 858-859, 181 USPQ 46, 48 (CCPA 1974)(emphasis omitted).

In view of the foregoing, applicants respectfully request that the rejections under 35 U.S.C. § 112 are reconsidered and withdrawn.

CONCLUSION

It is believed that the claims are in condition for allowance. Early and favorable action by the Examiner is earnestly requested.

AUTHORIZATION

No fee is believed due. However, the Commissioner is hereby authorized to charge any fees which may be required for consideration of this Amendment to Deposit Account No. 13-4500, Order No. 2119-4280.

Respectfully submitted,
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